

REMARKS

Claims 8 and 37 have been amended to incorporate therein the recitation of claim 53.

Claims 52 and 53 have been canceled. Claim 57 has been amended to correct a typographical error.

Review and reconsideration on the merits are requested.

Claims 8 and 51-56 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Publication No. US 2004/0167289 to Bekiarian et al, U.S. Patent No. 6,140,436 to Doyle et al, Odian (*Principles of Polymerization*) and U.S. Publication No. US 2004/0072977 to Kaulbach et al. Claims 9-10 and 38 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bekiarian et al, Doyle et al and Odian, further in view of U.S. Patent No. 4,433,082 to Grot. Further, claims 37 and 57-59 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bekiarian et al in view of Doyle et al.

Applicants respond as follows.

The fluoropolymer dispersion of amended claim 8 comprises a fluoropolymer solid composition dispersed in a liquid medium, said fluoropolymer solid composition containing a fine particle comprising a fluoropolymer having an acid/acid salt group. The fine particle comprising the fluoropolymer contains a spherical fluoropolymer fine particle and has an average particle diameter of 10 to 300 nm.

In contrast, Bekiarian et al does not teach spherical polymer particles with acid/acid salt groups, although Bekiarian et al may teach spherical polymer particles having $-SO_2X^1$ and/or $-COZ^1$. The reason therefor is explained in Applicants' Remarks at pages 4-5 of the Amendment filed August 21, 2009.

The Examiner states that “Doyle discloses that the reference discloses that the sulfonyl fluoride copolymer resin can be hydrolyzed by suspension in a hydrolyzing medium (col. 4, lines 64-66)”. (Paragraph 10)

The Examiner also states that “it is significant to note that Doyle discloses a process in which the fluoropolymer may be hydrolyzed by several methods including hydrolysis of the particles in a suspension, i.e. without drying”.

However, Doyle et al does not disclose “without drying”.

When a hydrolysis medium is added to a dispersion containing a polymer resin, the resultant is called a dispersion.

In contrast, when a hydrolysis medium is added to a suspension solution containing a polymer resin, the resultant is called a suspension, not a dispersion.

When a hydrolysis medium is added to a resin dry powder, the resultant is called a slurry or suspension, not a dispersion.

The particle formed in suspension solution is not spherical, as discussed in the Amendment filed August 21, 2009.

Since Doyle discloses that the sulfonyl fluoride copolymer resin can be hydrolyzed by suspension in a hydrolyzing medium, Doyle does not disclose that a hydrolysis medium is added to a dispersion containing a polymer resin.

Thus, Doyle et al does not disclose, “without drying.”

Even if the Examiner disagrees, Doyle et al does not disclose a process for hydrolyzing a polymer having an average particle diameter of 10 to 300 nm.

Doyle et al discloses that the sulfonyl fluoride copolymer resin can be hydrolyzed by suspension in a hydrolyzing medium (col. 4, lines 64-66).

Doyle et al also discloses, “followed by optional addition of cosolvent, and filtration or centrifugation of the resultant mixture, and finally solvent casting of the ionomer solution onto a substrate” (col. 4, line 66 to col. 5, line 2).

The filtration or centrifugation of the resultant mixture is an essential step for washing and concentrating the polymer (or polymer solution) before being formed into a film, sheet and the like.

In this regard, Doyle et al washed a polymer with water several times in the Examples of their specification. (Doyle et al does not concentrate a dispersion, but rather obtains a white powder in the Examples.)

Filtration or centrifugation can be applied to relatively large particles. It cannot be applied to such small particles having a particle size of 10 to 300 nm. Due to this, centrifugal ultrafiltration is applied in the Examples of the present application.

Thus, Doyle et al does not disclose a process for hydrolyzing a polymer having an average particle diameter of 10 to 300 nm.

In summary, Bekiarian et al does not teach spherical polymer particles with acid/acid salt groups, and Doyle et al does not disclose the hydrolysis of particles without drying. Even if the Examiner believes that the suspension means “without drying,” there is no doubt that Doyle et al fails to disclose the hydrolysis of particles having an average particle diameter of 10 to 300 nm.

Therefore, the dispersion of amended claims 8 and 37 containing a spherical fluoropolymer fine particle having an average particle diameter of 10 to 300 nm is neither taught nor suggested by the cited references, alone or in combination thereof.

Withdrawal of the foregoing rejections and allowance of claims 8-10, 37, 38, 51 and 54-59 is earnestly solicited.

In the event that the Examiner believes that it may be helpful to advance the prosecution of this application, the Examiner is invited to contact the undersigned at the local Washington, D.C. telephone number indicated below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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